EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course Outcomes-2021 Scheme

S.No.	Subject Code	Course Code	Course Outcomes
1	21MAT11 Calculus & Differential Equations	C101.1	Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bentness of a curve
		C101.2	Learn the notion of partial differentiation to calculate rate of change of multivariate functions and solve problems related to composite functions and Jacobian
		C101.3	Solve first-order linear/nonlinear ordinary differential equations analytically using standard methods
		C101.4	Demonstrate various models through higher order differential equations and solve such linear ordinary differential equations
		C101.5	Test the consistency of a system of linear equations and to solve them by direct and iterative methods

S.No.	Subject Code	Course Code	Course Outcomes
2	21CHE12 Engineering Chemistry	C102.1	Discuss the electrochemical energy systems such as electrodes and batteries
		C102.2	Explain the fundamental concepts of corrosion, its control and surface modification methods namely electroplating and electroless plating
		C102.3	Enumerate the importance, synthesis and applications of polymers. Understand properties and application of nanomaterials
		C102.4	Describe the principles of green chemistry, understand properties and application alternative fuels
		C102.5	Illustrate the fundamental principles of water chemistry, applications of volumetric and analytical instrumentation

S.No.	Subject Code	Course Code	Course Outcomes
3	21PSP13 Problem-Solving through Programming	C103.1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts
		C103.2	Apply programming constructs of C language to solve the real world problem
		C103.3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting
		C103.4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
		C103.5	Design and Develop Solutions to problems using modular programming constructs using functions

S.No.	Subject Code	Course Code	Course Outcomes
4	21ELN14 Basic Electronics & Communication Engineering	C104.1	Describe the concepts of electronic circuits encompassing power supplies, amplifiers and oscillators.
		C104.2	Present the basics of digital logic engineering including data representation, circuits and the microcontroller system with associated sensors and actuators
		C104.3	Discuss the characteristics and technological advances of embedded systems.
		C104.4	Relate to the fundamentals of communication engineering spanning from the frequency spectrum to the various circuits involved including antennas.
		C104.5	Explain the different modes of communications from wired to wireless and the computing involved

S.No.	Subject Code	Course Code	Course Outcomes
5	21EME15 Elements of Mechanical Engineering	C105.1	Understand basic concepts of mechanical engineering in the fields of energy and its utilization, materials technology, manufacturing techniques, and transmission systems through demonstrations
		C105.2	Understand the application of energy sources in Power generation and utilization, Engineering materials, manufacturing, and machining techniques leading to the latest advancements and transmission systems in day to day activities

		C105.3	Apply the skills in developing simple mechanical elements and processes

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6	21CHEL16 Engineering Chemistry Laboratory	C106.1	Determine the pKa and coefficient of Viscosity of a given organic liquid
		C106.2	Estimate the amount of substance present in the given solution using Potentiometer Conductometric and Colorimetric
		C106.3	Determine the total hardness and chemical oxygen demand in the given solution by volumetric analysis method
		C106.4	Estimate the percentage of Nickel, copper and Iron in the given analyte solution by titration method
		C106.5	Demonstrate flame photometric estimation of sodium & potassium and the synthesis of nanomaterials by Precipitation method

S.No.	Subject Code	Course Code	Course Outcomes
7	21CPL17 Computer Programming Laboratory	C107.1	Define the problem statement and identify the need for computer programming
		C107.2	Make use of C compiler, IDE for programming, identify and correct the syntax and syntactic errors in programming
		C107.3	Develop algorithm, flowchart and write programs to solve the given problem
		C107.4	Demonstrate use of functions, recursive functions, arrays, strings, structures and pointers in problem solving
		C107.5	Document the inference and observations made from the implementation

S.No.	Subject Code	Course Code	Course Outcomes
8	21EGH18 Communicative English	C108.1	Understand and apply the Fundamentals of Communication Skills in their communication skills
		C108.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills
		C108.3	To impart basic English grammar and essentials of language skills as per present requirement
		C108.4	To impart basic English grammar and essentials of language skills as per present requirement
		C108.5	Adopt the Techniques of Information Transfer through presentation

S.No.	Subject Code	Course Code	Course Outcomes
9	21SFH19 Scientific Foundations of Health	C109.1	To understand Health and wellness (and its Beliefs)
		C109.2	To acquire Good Health & It's balance for positive mindset
		C109.3	To inculcate and develop the healthy lifestyle habits for good health
		C109.4	To Create of Healthy and caring relationships to meet the requirements of MNC and LPG world
		C109.5	To adopt the innovative & positive methods to avoid risks from harmful habits in their campus & outside the campus
		C109.6	To positively fight against harmful diseases for good health through positive mindset

S.No.	Subject Code	Course Code	Course Outcomes
10	21MAT21 Advanced Calculus and Numerical Methods	C110.1	Apply the concept of change of order of integration and change of variables to evaluate multiple integrals and their usage in computing the area and volume
		C110.2	Illustrate the applications of multivariate calculus to understand the solenoidal and irrotational vectors and also exhibit the inter dependence of line, surface and volume integrals
		C110.3	Formulate physical problems to partial differential equations and to obtain solution for standard practical PDE's
		C110.4	Apply the knowledge of numerical methods in modelling of various physical and engineering phenomena
		C110.5	Solve first order ordinary differential equations arising in engineering problems

S.No.	Subject Code	Course Code	Course Outcomes
11	21PHY22 Engineering Physics	C111.1	Interpret the types of mechanical vibrations and their applications, the role of Shock waves in various fields
		C111.2	Demonstrate the quantisation of energy for microscopic system
		C111.3	Apply LASER and Optical fibers in opto electronic system
		C111.4	Illustrate merits of quantum free electron theory and applications of Hall effect

		C111.5	Analyse the importance of XRD and Electron Microscopy in Nano material characterization

S.No.	Subject Code	Course Code	Course Outcomes
12	21ELE23 Basic Electrical Engineering	C112.1	Analyse basic DC and AC electric circuits
		C112.2	Explain the working principles of transformers and electrical machines
		C112.3	Explain the concepts of electric power transmission and distribution of power
		C112.4	Understand the wiring methods, electricity billing, and working principles of circuit protective devices and personal safety measures

S.No.	Subject Code	Course Code	Course Outcomes
13	21CIV24 Elements of Civil Engineering and Mechanics	C113.1	Understand the various fields of civil engineering
		C113.2	Compute the resultant of a force system and resolution of a force
		C113.3	Comprehend the action for forces, moments, and other types of loads on rigid bodies and compute the reactive forces
		C113.4	Locate the centroid and compute the moment of inertia of regular and built-up sections
		C113.5	Analyze the bodies in motion

S.No.	Subject Code	Course Code	Course Outcomes
14	21EVN25 Engineering Visualization	C114.1	Understand and visualize the objects with definite shape and dimensions
		C114.2	Analyze the shape and size of objects through different views
		C114.3	Develop the lateral surfaces of the object
		C114.4	Create a 3D view using CAD software
		C114.5	Identify the interdisciplinary engineering components or systems through its graphical representation

S.No.	Subject Code	Course Code	Course Outcomes
15	21PHYL26 Engineering Physics Laboratory	C115.1	Understand the measuring techniques
		C115.2	Operate different instruments and be capable to analyse the experimental results
		C115.3	Construct the circuits and their analysis

S.No.	Subject Code	Course Code	Course Outcomes
16	21ELEL27 Basic Electrical Engineering Laboratory	C116.1	Verify KCL and KVL and maximum power transfer theorem for DC circuits
		C116.2	Compare power factors of different types of lamps
		C116.3	Demonstrate the measurement of the impedance of an electrical circuit and power consumed by a 3-phase load
		C116.4	Analyze two-way and three-way control of lamps
		C116.5	Explain the effects of open and short circuits in simple circuits
		C116.6	Interpret the suitability of earth resistance measured

S.No.	Subject Code	Course Code	Course Outcomes
17	21EGH28 Professional Writing Skills in English	C117.1	To understand and identify the Common Errors in Writing and Speaking
		C117.2	To Achieve better Technical writing and Presentation skills
		C117.3	To read Technical proposals properly and make them to Write good technical reports
		C117.4	Acquire Employment and Workplace communication skills
		C117.5	To learn about Techniques of Information Transfer through presentation in different level

S.No.	Subject Code	Course Code	Course Outcomes
18	21IDT29 Innovation and Design Thinking	C118.1	Appreciate various design process procedure
		C118.2	Generate and develop design ideas through different technique
		C118.3	Identify the significance of reverse Engineering to Understand products
		C118.4	Draw technical drawing for design ideas

S.No.	Subject Code	Course Code	Course Outcomes
19	21MAT31 Mathematics Course	C201.1	To solve ordinary differential equations using Laplace transform
		C201.2	Demonstrate the Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory
		C201.3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations

		C201.4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations
		C201.5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis

S.No.	Subject Code	Course Code	Course Outcomes
20	21EC32 Digital System Design using Verilog	C202.1	Simplify Boolean functions using K-map and Quine-McCluskey minimization technique
		C202.2	Analyze and design for combinational logic circuits
		C202.3	Analyze the concepts of Flip Flops (SR, D, T and JK) and to design the synchronous sequential circuits using Flip Flops
		C202.4	Model Combinational circuits (adders, subtractors, multiplexers) and sequential circuits using Verilog descriptions

S.No.	Subject Code	Course Code	Course Outcomes
21	21EC33 Basic Signal Processing	C203.1	Understand the basics of Linear Algebra
		C203.2	Analyse different types of signals and systems
		C203.3	Analyse the properties of discrete-time signals & systems
		C203.4	Analyse discrete time signals & systems using Z transforms

S.No.	Subject Code	Course Code	Course Outcomes
22	21EC34 Analog Electronic Circuits	C204.1	Understand the characteristics of BJTs and FETs for switching and amplifier circuits
		C204.2	Design and analyze FET amplifiers and oscillators with different circuit configurations and biasing conditions
		C204.3	Understand the feedback topologies and approximations in the design of amplifiers and oscillators
		C204.4	Design of circuits using linear ICs for wide range applications such as ADC, DAC, filters and timers
		C204.5	Understand the power electronic device components and its functions for basic power electronic circuits

S.No.	Subject Code	Course Code	Course Outcomes
23	21ECL35 Analog and Digital Electronics Lab	C205.1	Design and analyze the BJT/FET amplifier and oscillator circuits
		C205.2	Design and test Opamp circuits to realize the mathematical computations, DAC and precision rectifiers
		C205.3	Design and test the combinational logic circuits for the given specifications
		C205.4	Test the sequential logic circuits for the given functionality
		C205.5	Demonstrate the basic electronic circuit experiments using SCR and 555 timer

S.No.	Subject Code	Course Code	Course Outcomes
24	21SCR36 Social Connect and Responsibility	C206.1	Communicate and connect to the surrounding
		C206.2	Create a responsible connection with the society
		C206.3	Involve in the community in general in which they work
		C206.4	Notice the needs and problems of the community and involve them in problem –solving
		C206.5	Develop among themselves a sense of social & civic responsibility & utilize their knowledge in finding practical solutions to individual and community problems
		C206.6	Develop competence required for group-living and sharing of responsibilities & gain skills in mobilizing community participation to acquire leadership qualities and democratic attitudes

S.No.	Subject Code	Course Code	Course Outcomes
25	21CIP37 Constitution of India and Professional Ethics	C207.1	Analyse the basic structure of Indian Constitution
		C207.2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution
		C207.3	Know about our Union Government, political structure & codes, procedures
		C207.4	Understand our State Executive & Elections system of India
		C207.5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution
S.No.	**Subject Code**	**Course Code**	**Course Outcomes**
26	21EC381	C208.1	Demonstrate the truth table of various expressions and combinational circuits using logic gates

	LD (Logic Design) Lab using Pspice / MultiSIM	C208.2	Design various combinational circuits such as adders, subtractors, comparators, multiplexers and code converters
		C208.3	Construct flips-flops, counters and shift registers
		C208.4	Design and implement synchronous counters

S.No.	Subject Code	Course Code	Course Outcomes
27	21MATDIP31 Additional Mathematics-I	C209.1	Use derivatives and partial derivatives to calculate the rate of change of multivariate functions.
		C209.2	Apply concepts of complex numbers and vector algebra to analyse the problems arising in a related area.
		C209.3	Analyse position, velocity and acceleration in two and three dimensions of vector-valued functions.
		C209.4	Learn techniques of integration including the evaluation of double and triple integrals.
		C209.5	Identify and solve first-order ordinary differential equations

S.No.	Subject Code	Course Code	Course Outcomes
28	21MAT41 Maths for Communication Engineers	C210.1	Use the concepts of an analytic function and complex potentials to solve the problems arising in electromagnetic field theory. Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing
		C210.2	Obtain Series Solutions of Ordinary Differential Equation
		C210.3	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data
		C210.4	Apply discrete and continuous probability distributions in analysing the probability models arising in the engineering field
		C210.5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis

S.No.	Subject Code	Course Code	Course Outcomes
29	21EC42 Digital Signal Processing	C211.1	Determine response of LTI systems using time domain and DFT techniques
		C211.2	Compute DFT of real and complex discrete time signals
		C211.3	Compute DFT using FFT algorithms
		C211.4	Design FIR and IIR Digital Filters

		C211.5	Design of Digital Filters using DSP processor

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30	21EC43 Circuits & Controls	C212.1	Analyse and solve Electric circuit, by applying, loop analysis, Nodal analysis and by applying network Theorems
		C212.2	Evaluate two port parameters of a network and Apply Laplace transforms to solve electric networks
		C212.3	Deduce transfer function of a given physical system, from differential equation representation or Block Diagram representation and SFG representation
		C212.4	Calculate time response specifications and analyse the stability of the system
		C212.5	Draw and analyse the effect of gain on system behaviour using root loci
		C212.6	Perform frequency response Analysis and find the stability of the system
		C212.7	Represent State model of the system and find the time response of the system

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31	21EC44 Communication Theory	C213.1	Understand the amplitude and frequency modulation techniques and perform time and frequency domain transformations
		C213.2	Identify the schemes for amplitude and frequency modulation and demodulation of analog signals and compare the performance
		C213.3	Characterize the influence of channel noise on analog modulated signals
		C213.4	Understand the characteristics of pulse amplitude modulation, pulse position modulation and pulse code modulation systems
		C213.5	Illustration of digital formatting representations used for Multiplexers, Vocoders and Video transmission

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32	21BE45 Biology For Engineers	C214.1	Elucidate the basic biological concepts via relevant industrial applications and case studies
		C214.2	Evaluate the principles of design and development, for exploring novel bioengineering projects

		C214.3	Corroborate the concepts of biomimetics for specific requirements
		C214.4	Think critically towards exploring innovative biobased solutions for socially relevant problems

S.No.	Subject Code	Course Code	Course Outcomes
33	21ECL46 Communication Laboratory I	C215.1	Demonstrate the AM and FM modulation and demodulation by representing the signals in time and frequency domain
		C215.2	Design and test the sampling, Multiplexing and PAM with relevant circuits
		C215.3	Demonstrate the basic circuitry and operations used in AM and FM receivers
		C215.4	Illustrate the operation of PCM and delta modulations for different input conditions

S.No.	Subject Code	Course Code	Course Outcomes
34	21KSK47 Samskrutika Kannada	C216.1	ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಪರಿಚಯವಾಗುತ್ತದೆ.
		C216.2	ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳು ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಆಸಕ್ತಿಯು ಮೂಡುತ್ತದೆ.
		C216.3	ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.
		C216.4	ಕನ್ನಡ ಭಾಷಾಭ್ಯಾಸ, ಸಾಮಾನ್ಯ ಕನ್ನಡ ಹಾಗೂ ಆಡಳಿತ ಕನ್ನಡದ ಪದಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.
	OR		
	21KSK47 Balake Kannada	C216.1	To understand the necessity of learning of local language for comfortable life
		C216.2	To Listen and understand the Kannada language properly.
		C216.3	To speak, read and write Kannada language as per requirement.
		C216.4	To communicate (converse) in Kannada language in their daily life with kannada speakers.
		C216.5	To speak in polite conservation.

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35	21EC483 Octave / Scilab for Signals	C217.1	Demonstrate the DSP concepts on signal generation and sampling using Scilab/Octave
		C217.2	Design and verify the computation of discrete signals using Scilab/Octave
		C217.3	Demonstrate and verify the application of FFT/DFT algorithm for a given signal using Scilab/Octave

		C217.4	Design and demonstrate programs to evaluate different types of low and high pass FIR filters using Scilab/Octave
		C217.5	Design, demonstrate and visualize different real world signals using Scilab/Octave programs

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36	21UHV49 Universal Human Values	C218.1	Holistic vision of life
		C218.2	Socially responsible behaviour
		C218.3	Environmentally responsible work
		C218.4	Ethical human conduct
		C218.5	Having Competence and Capabilities for Maintaining Health and Hygiene

S.No.	Subject Code	Course Code	Course Outcomes
37	21INT49 Inter/Intra Institutional Internship	C219.1	Construct the company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for his / her organization of internship.
		C219.2	Determine the challenges and future potential for his / her internship organization in particular and the sector in general.
		C219.3	Test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.
		C219.4	Apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization
		C219.5	Analyze the functioning of internship organization and recommend changes for improvement in processes.

S.No.	Subject Code	Course Code	Course Outcomes
38	21MATDIP41 Additional Mathematics-II	C220.1	Test for consistency and solve the system of linear equations
		C220.2	Solve higher order differential equations
		C220.3	Apply elementary probability theory and solve related problems
		C220.4	To interpolate/extrapolate from the given data
		C220.5	Apply the knowledge of numerical methods in modelling and solving engineering problems

S.No.	Subject Code	Course Code	Course Outcomes
39	21EC51 Digital Communication	C301.1	Analyze different digital modulation techniques and choose the appropriate modulation technique for the given specifications
		C301.2	Test and validate symbol processing and performance parameters at the receiver under ideal and corrupted bandlimited channels
		C301.3	Differentiate various spread spectrum schemes and compute the performance parameters of communication system
		C301.4	Apply the fundamentals of information theory and perform source coding for given message
		C301.5	Apply different encoding and decoding techniques with error Detection and Correction

S.No.	Subject Code	Course Code	Course Outcomes
40	21EC52 Computer Organization & ARM Microcontroller	C302.1	Explain the basic organization of a computer system
		C302.2	Demonstrate functioning of different sub systems, such as processor, Input/output, and memory
		C302.3	Describe the architectural features and instructions of 32-bit microcontroller ARM Cortex M3
		C302.4	Apply the knowledge gained for Programming ARM Cortex M3 for different applications

S.No.	Subject Code	Course Code	Course Outcomes
41	21EC53 Computer Communication Networks	C303.1	Understand the concepts of networking thoroughly
		C303.2	Identify the protocols and services of different layers
		C303.3	Distinguish the basic network configurations and standards associated with each network
		C303.4	Discuss and analyse the various applications that can be implemented on networks

S.No.	Subject Code	Course Code	Course Outcomes
42	21EC54 Microwave Theory & Antennas	C304.1	Evaluate problems on electrostatic force, electric field due to point, linear, volume charges by applying conventional methods and charge in a volume

		C304.2	Apply Gauss law to evaluate Electric fields due to different charge distributions and Volume Charge distribution by using Divergence Theorem
		C304.3	Determine potential and energy with respect to point charge and capacitance using Laplace equation and Apply Biot-Savart's and Ampere's laws for evaluating Magnetic field for different current configurations
		C304.4	Calculate magnetic force, potential energy and Magnetization with respect to magnetic materials and voltage induced in electric circuits
		C304.5	Apply Maxwell's equations for time varying fields, EM waves in free space and conductors and Evaluate power associated with EM waves using Poynting theorem

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43	21ECL55 Communication Lab II	C305.1	Design and test the digital modulation circuits and display the waveforms
		C305.2	To Implement the source coding algorithm using C/C++/ MATLAB code
		C305.3	To Implement the Error Control coding algorithms using C/C++/ MATLAB code
		C305.4	Illustrate the operations of networking concepts and protocols using C programming and network simulators

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44	21RMI56 Research Methodology & Intellectual Property Rights	C306.1	To know the meaning of engineering research
		C306.2	To know the procedure of Literature Review and Technical Reading
		C306.3	To know the fundamentals of patent laws and drafting procedure
		C306.4	Understanding the copyright laws and subject matters of copyrights and designs
		C306.5	Understanding the basic principles of design rights

S.No.	Subject Code	Course Code	Course Outcomes
45	21CIV57 Environmental Studies	C307.1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale
		C307.2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment

		C307.3	Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components
		C307.4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

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46	21EC581 IoT (Internet of Things) Lab	C308.1	Understand internet of Things and its hardware and software components
		C308.2	Interface I/O devices, sensors & communication modules
		C308.3	Remotely monitor data and control devices
		C308.4	Develop real life IoT based projects

S.No.	Subject Code	Course Code	Course Outcomes
47	21EC61 Technological Innovation Management and Entrepreneurship	C309.1	Understand the fundamental concepts of Management and its functions
		C309.2	Understand the different functions to be performed by managers/Entrepreneur
		C309.3	Understand the social responsibilities of a Business.
		C309.4	Understand the Concepts of Entrepreneurship and to identify Business opportunities.
		C309.5	Understand the components in developing a business plan and awareness about various sources of funding and Institutions supporting Entrepreneur

S.No.	Subject Code	Course Code	Course Outcomes
48	21EC62 Microwave Theory and Antenna	C310.1	Describe the use and advantages of microwave transmission
		C310.2	Analyze various parameters related to transmission lines
		C310.3	Identify microwave devices for several applications
		C310.4	Analyze various antenna parameters and their significance in building the RF system
		C310.5	Identify various antenna configurations for suitable applications

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49	21EC63 VLSI Design & Testing	C311.1	Demonstrate understanding of MOS transistor theory, CMOS fabrication flow and technology scaling
		C311.2	Draw the basic gates using the stick and layout diagram with the knowledge of physical design aspects
		C311.3	Interpret memory elements along with timing considerations
		C311.4	Interpret testing and testability issues in combinational logic design
		C311.5	Interpret testing and testability issues in combinational logic design

S.No.	Subject Code	Course Code	Course Outcomes
50	21EC643 Python Programming	C312.1	To acquire programming skills in Python
		C312.2	To demonstrate data structure representation using Python
		C312.3	To develop the skill of pattern matching and files in Python
		C312.4	To acquire Object Oriented Skills in Python
		C312.5	To develop the ability to write database applications in Python

S.No.	Subject Code	Course Code	Course Outcomes
51	21CS654 JAVA Programming	C313.1	Learn fundamental features of object-oriented language and JAVA.
		C313.2	Set up Java JDK environment to create, debug and run simple Java programs.
		C313.3	Learn object-oriented concepts using programming examples.
		C313.4	Study the concepts of importing of packages and exception handling mechanism.
		C313.5	Discuss the String Handling examples with Object Oriented concepts.

S.No.	Subject Code	Course Code	Course Outcomes
52	21ECL66 VLSI Laboratory	C314.1	Design and simulate combinational and sequential digital circuits using Verilog HDL
		C314.2	Understand the synthesis process of digital circuits using EDA tool
		C314.3	Perform ASIC design flow and understand the process of synthesis, synthesis constraints and

			evaluating the synthesis reports to obtain optimum gate level netlist
		C314.4	Design and simulate basic CMOS circuits like inverter, common source amplifier, differential amplifier, SRAM
		C314.5	Perform RTL_GDSII flow and understand the stages in ASIC design

S.No.	Subject Code	Course Code	Course Outcomes
53	21ECMP67 Mini Project	C315.1	Perform a literature search to review current knowledge and developments in the chosen technical area.
		C315.2	Undertake detailed technical work in the chosen area using one or more such as: Theoretical studies, Computer simulations, Hardware construction in the chosen application
		C315.3	Prepare reports to establish work completed, and to schedule any additional changes to be done within the specified time frame for the project.
		C315.4	Deliver presentation on the area of work being done and any specific contributions done related to the field of work
		C315.5	Prepare a formal report describing the work undertaken and results obtained also to publish work in National / International proceedings to compete and upgrade the work

S.No.	Subject Code	Course Code	Course Outcomes
54	21INT68 Innovation/Entrepreneurship /Societal Internship	C316.1	Perform a literature search to review current knowledge and developments in the chosen technical area.
		C316.2	Undertake detailed technical work in the chosen area
		C316.3	Prepare reports to establish work completed, and to schedule any additional changes to be done within the specified time frame for the project.
		C316.4	Deliver presentation on the area of work being done and any specific contributions done related to the field of work
		C316.5	Prepare a formal report describing the work undertaken and results obtained also to

			publish work in National / International proceedings to compete and upgrade the work